Scenario and Cell Topology

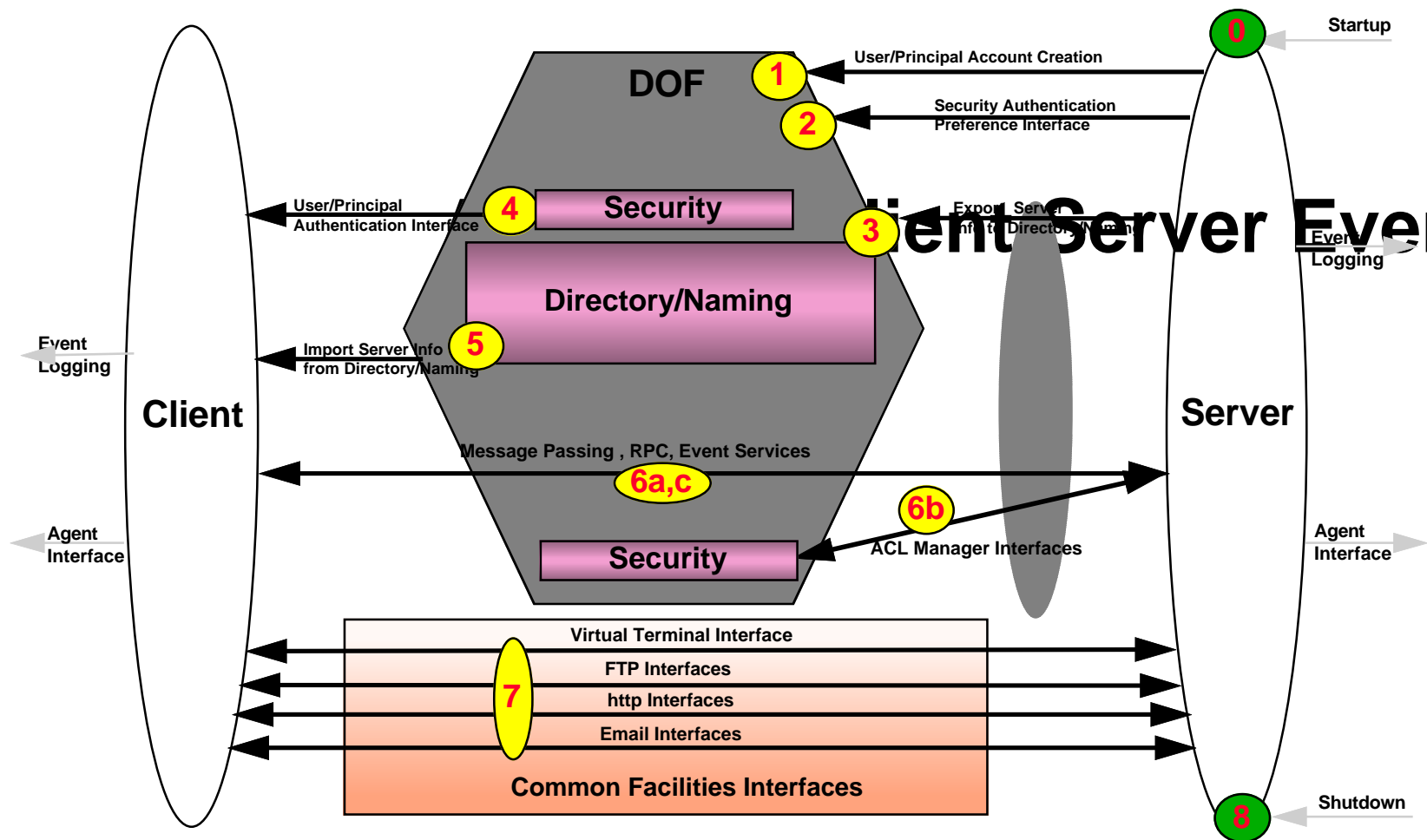## Laks Prabhala

18 January 1995

CSS Topics

Scenario

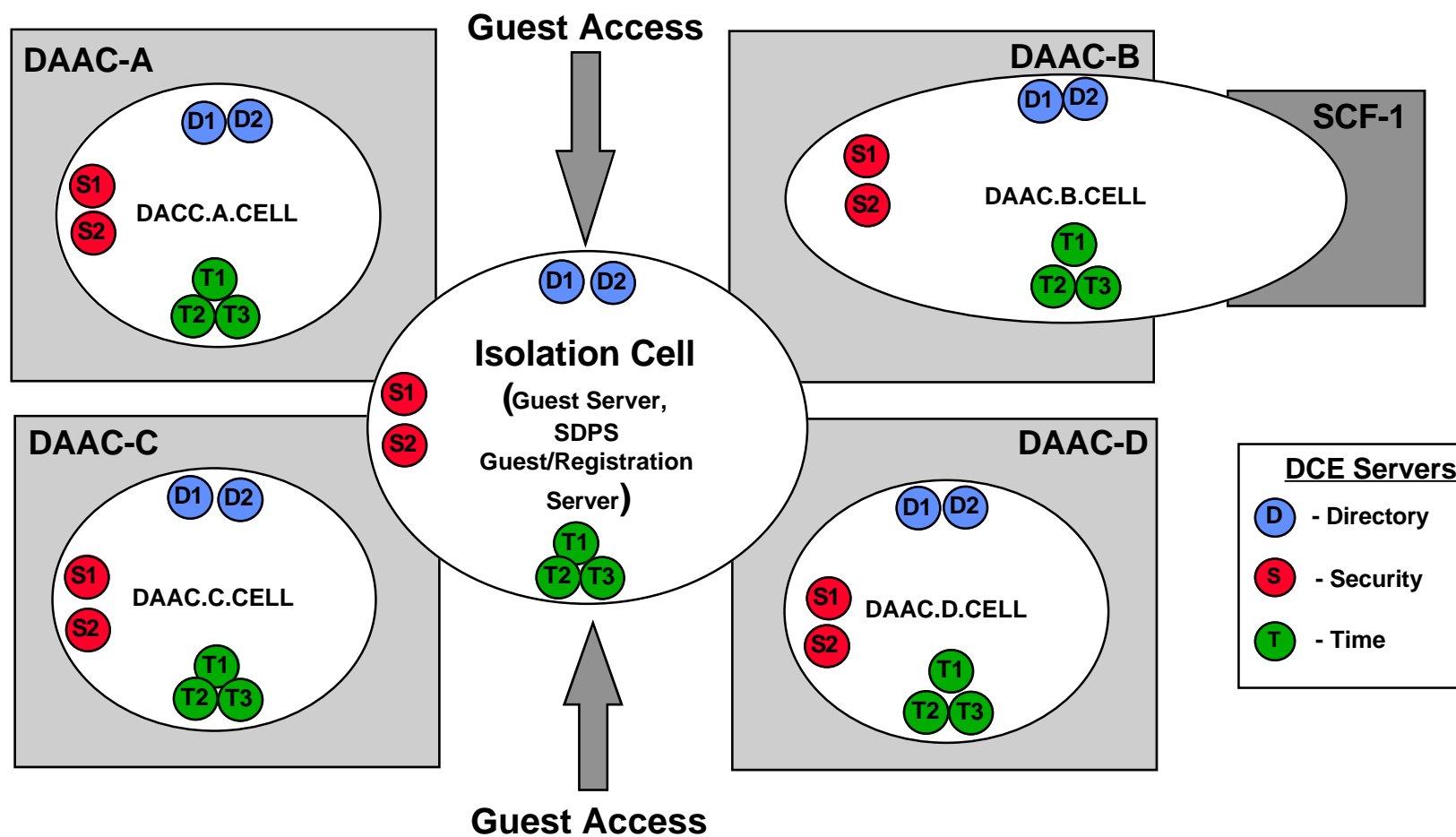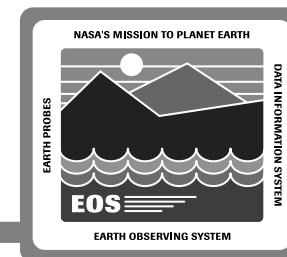- **Generic Client Server Event Flow**

Cell Topology of Various ECS Cells

- **Isolation Cell**
- **Guest Login**
- **Time Service**

V0 Interoperability

Client Server Event Flow

Startup 0

DOF

User/Principal Account Creation → 1

Security Authentication
Preference Interface → 2

User/Principal
Authentication Interface ← 4 **Security**

3 Export Server
Info to Directory/Naming

Event
Logging

Directory/Naming

Event
Logging

Import Server Info
from Directory/Naming ← 5

Client   **Server**

Message Passing , RPC, Event Services
6a,c

6b

Agent
Interface

Security   ACL Manager Interfaces   Agent
Interface

Virtual Terminal Interface

FTP Interfaces

7   http Interfaces

Email Interfaces

Common Facilities Interfaces

8 **Shutdown**

ECS Cell Topology

Guest Access

DAAC-A

D1 D2

S1
S2

DACC.A.CELL

T1
T2 T3

DAAC-B

SCF-1

D1 D2

S1
S2

DAAC.B.CELL

T1
T2 T3

Isolation Cell

D1 D2

S1
S2

(Guest Server,
SDPS
Guest/Registration
Server**)**

T1
T2 T3

DAAC-C

D1 D2

S1
S2

DAAC.C.CELL

T1
T2 T3

DAAC-D

D1 D2

S1
S2

DAAC.D.CELL

T1
T2 T3

DCE Servers

D - Directory

S - Security

T - Time

Guest Access

ECS Cell Topology

A Cell is a basic unit of operation and administration consisting of users, systems, and resources that share common services

Multicell is scalable and provides autonomy and better security

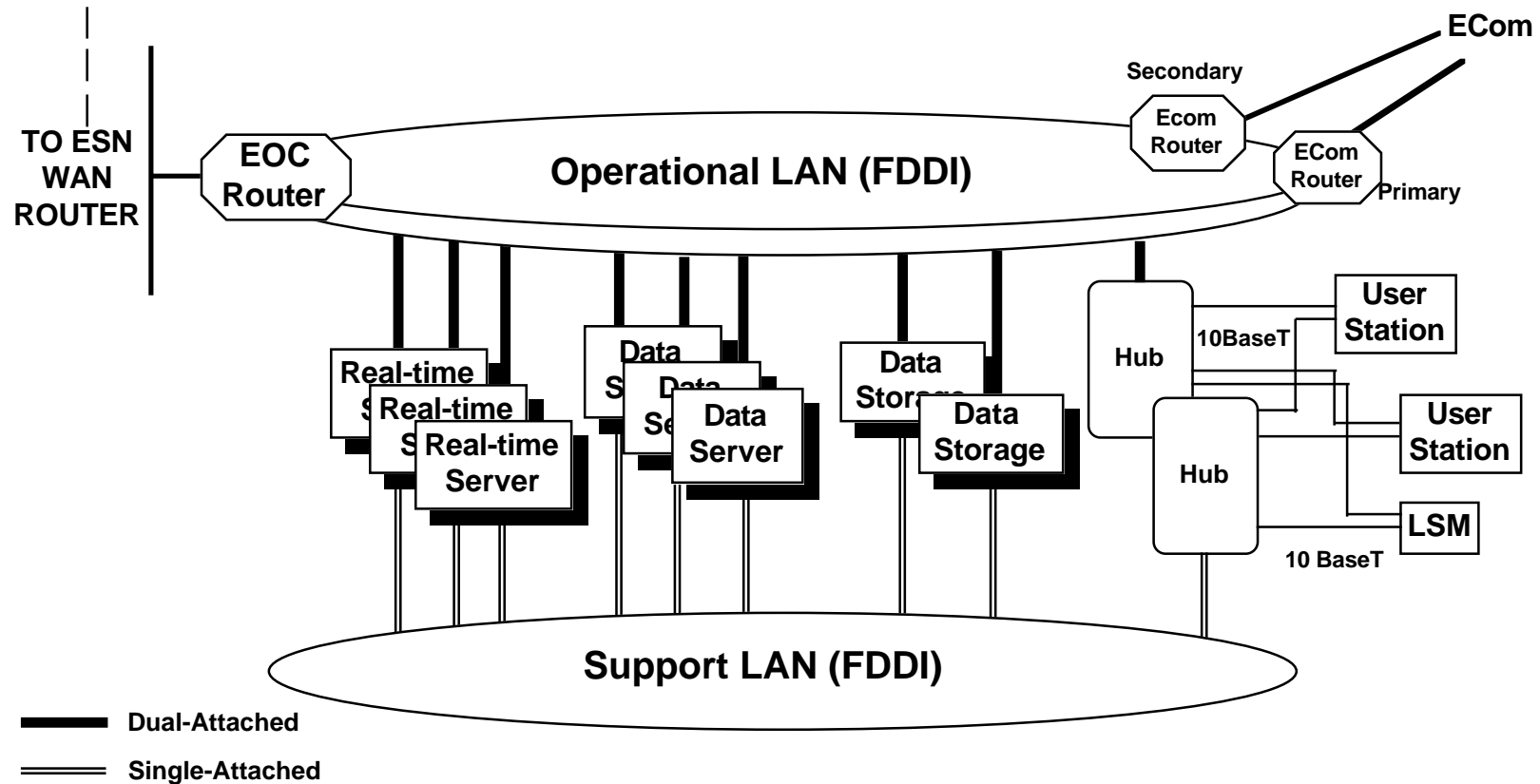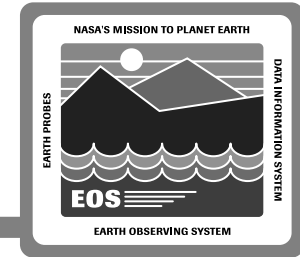**Each DAAC will have a cell with the following**
- **2 Security Servers, 2 Directory Servers and 3 Time Servers**

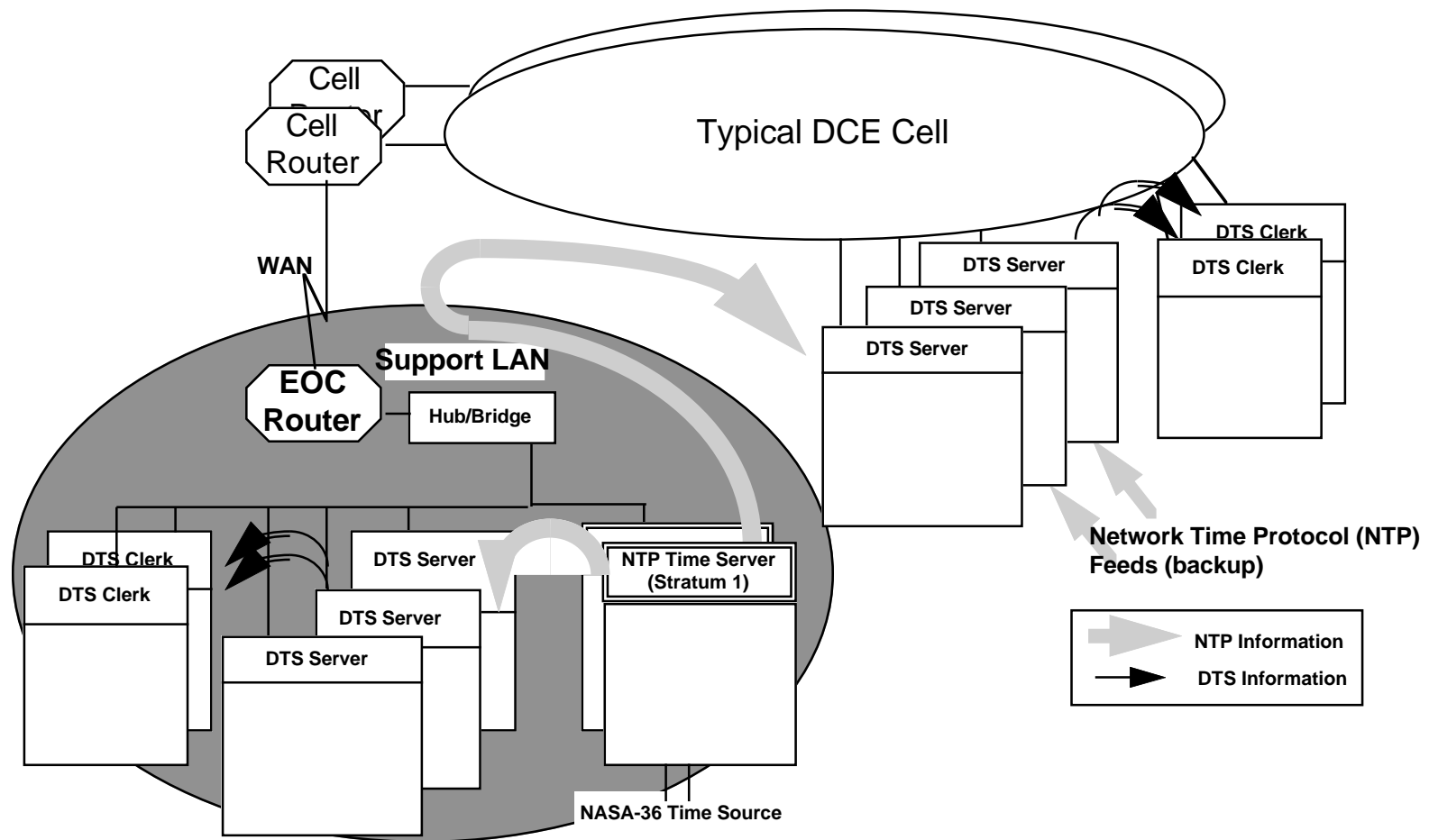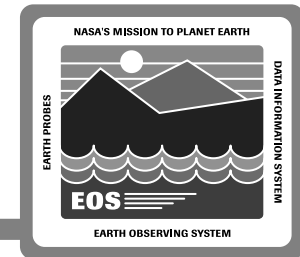**Every SCF will be associated with a functionally related DAAC**

Isolation Cell
- **Integrated cell for all guest user access**
- **Provides a unified view of ECS to the guest user**
- **Protects ECS from security intrusions from non-registered users**
- **Isolates guest user operations/accesses from registered user access**

EOC LAN Design: Logical Connectivity

EARTH PROBES

NASA'S MISSION TO PLANET EARTH

DATA INFORMATION SYSTEM

EOS

EARTH OBSERVING SYSTEM

ECom

Secondary

Ecom Router

ECom Router

Primary

TO ESN WAN ROUTER

EOC Router

Operational LAN (FDDI)

Real-time Server
Real-time Server
Real-time Server

Data Server
Data Server
Data Server

Data Storage
Data Storage

Hub

10BaseT

User Station

User Station

Hub

LSM

10 BaseT

Support LAN (FDDI)

▬▬▬ **Dual-Attached**

═══ **Single-Attached**

DTS Configuration Plan

Cell Router

Cell Router

Typical DCE Cell

WAN

DTS Clerk

DTS Server

DTS Clerk

DTS Server

DTS Server

Support LAN

EOC Router

Hub/Bridge

DTS Clerk

DTS Clerk

DTS Server

NTP Time Server (Stratum 1)

DTS Server

Network Time Protocol (NTP) Feeds (backup)

DTS Server

NTP Information

DTS Information

NASA-36 Time Source

V0 Interoperability

ECS - DAAC Cell
(Kerberos Secure Domain)

ECS- Isolation Cell
(Kerberos Secure Domain with minimum privileges)

V0
(Unix/Host Security Only)

Data Server

Rel. A ECS Client Emulation

V0 ESDIS IMS Server Emulation

Rel. A LIM

Gateway (ECS-V0)

Rel. A ECS Data Server Emulation

ESDIS VO Client Emulation

ECS Client

IMS Server
IMS Server

◆ **DCE Authenticated Access**